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PAPERS

IN

MECHANICKS.

MECHANICKS.

THIRTY GUINEAS were this Seſſion voted to Mr. JOHN PEEK, for his Improvement of the PACKING-PRESS; a Plate of which is annexed, and a complete Model reſerved in the Society's Repoſitory for the uſe of the Public.

SIR,

I HEREWITH ſend you, for the inſpection of the Society for the encouragement of Arts, Manufactures, and Commerce, a model of a Packing-preſs, which I conceive to be a very material improvement on that machine. I have been a good deal accuſtomed both to packing and making Packing-Preſſes; and, from the experience I have had, it ſeems to me that it would render the operation much leſs laborious, and expedite the buſineſs very much.

One very conſiderable improvement is, that much time would be ſaved by its being a double preſs; for it will very readily be perceived, that when the lower package has been ſufficiently preſſed, as the bed or preſſer is raiſed (another package being thereon), the upper package begins to be preſſed as that one underneath is relieved, and ſo alternately during the whole operation. Should the Society deem it ſuch an acquiſition, for the benefit of the public, as to merit their approbation and encouragement, I ſhall feel myſelf happy in having ſubmitted myſelf to the liberality of Gentlemen whoſe avowed intentions are to encourage individuals to exert themſelves for the univerſal benefit of Society.

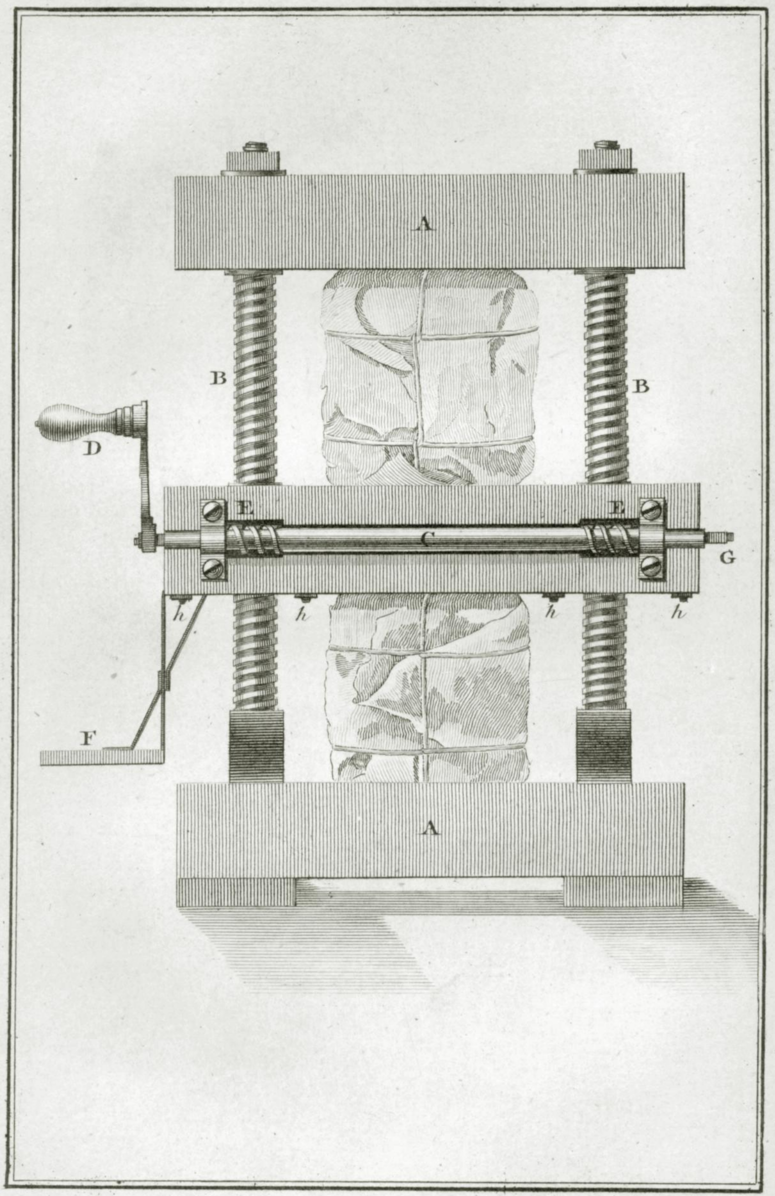
Whenever called upon by you for that purpoſe, I ſhall be ready to attend the Society to anſwer any queſtions they may be pleaſed to put, and give any further information in my power.

I am, SIR,
Your obedient humble ſervant,
JOHN PEEK.

No. 1, *Cold-Bath*, *New-Road*,
near the Adam and Eve,
May 23, 1796.

Mr. MORE.

Pl. 1.



Mr: Jno: Peek's new constructed Packing Preſs.

Deſcription of the PLATE *for Mr.* PECK'*s* PACKING-PRESS.

A A. The frame of the Preſs.

B B. The large ſcrews, which, in this Preſs, contrary to thoſe in common uſe, are fixed and immoveable.

C. A circular iron bar, extending beyond the ſides of the Preſs, and having thereon two worms, or endleſs ſkrews, E E, which work in two toothed wheels fixed to the nuts, and, by turning the winch D, drive the nuts and bed up and down the ſkrews as may be found neceſſary.

F. A ſtage, ſuſpended from the bed, and on which the men ſtand who work the Preſs: ſuch a ſtage may, if found neceſſary, be fixed at the other end of the bar, as ſhown by the ſquare ſhoulder, G. The bed of this Preſs muſt be formed of two pieces of ſtrong wood, which are held together by ſcrews and nuts, paſſed through them, as ſhewn at *h h h h*.

THIRTY

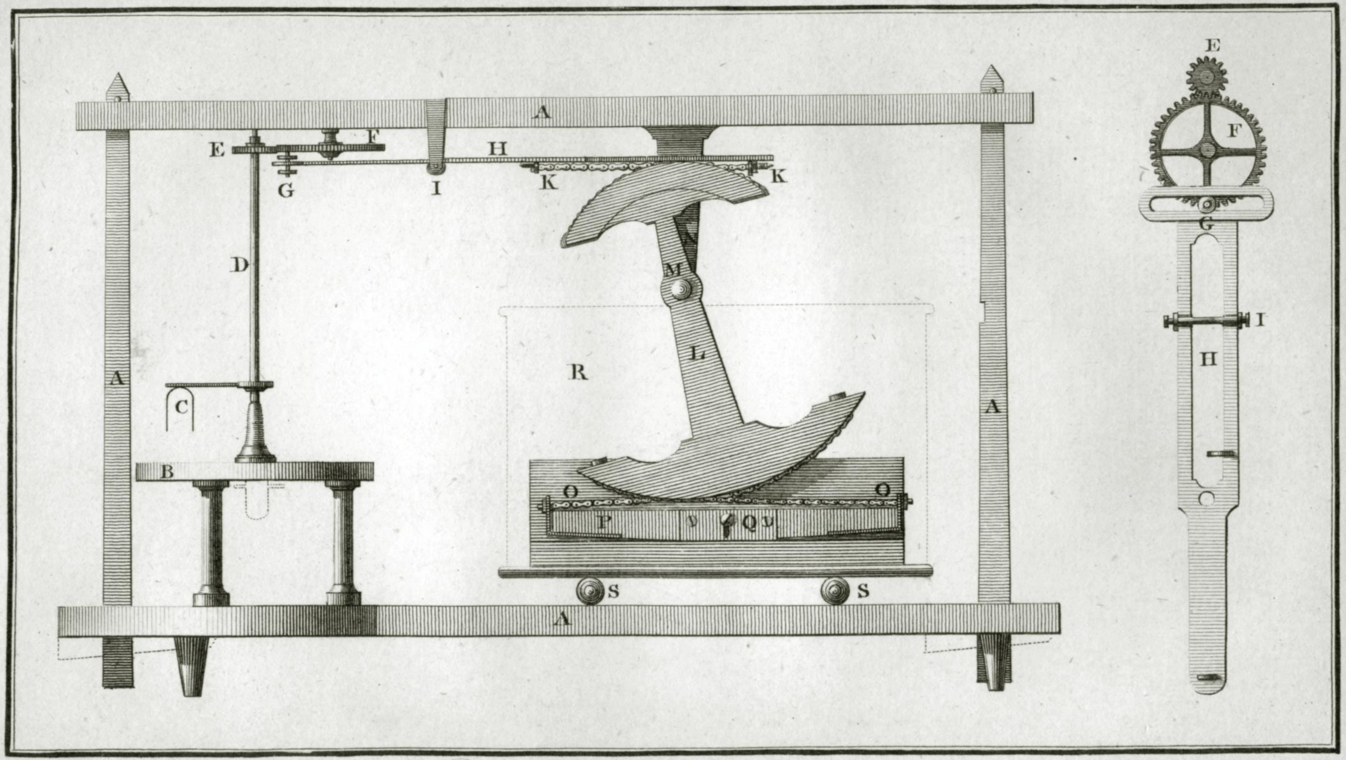
THIRTY GUINEAS were this Seſſion voted to Mr. EDMUND BUNTING, for his Improvement of the CALENDER MILL, of which a Plate and Deſcription are hereunto annexed, and the Model reſerved in the Society's Repoſitory for the uſe of the Public.

WE, whoſe names are hereunto ſubſcribed, have carefully examined Mr. Edmund Bunting's Calender Mill, and do approve of it, as a valuable acquiſition to perſons in that branch of buſineſs, and every way calculated to deſerve the attention of the Society, as well from its cheapneſs as from its practicability.

RICHARD BAKER,
Engine-maker, Fore-ſtreet,
SAMUEL WARNER,
Coal-yard, Drury-lane, Calendrer.
WM. WILKINSON and Co.
Calendrers, Hill-ſtreet, Finſbury-ſquare.
JOHN THWAITES,
Roſoman-ſtreet, Clerkenwell, Clock-maker.

To the Society for Encouragement of Arts, Manufactures, and Commerce.

Pl.2.



Mr. Edmund Buntings New Constructed Calender Mill.

Deſcription of the PLATE *of* Mr. EDMUND BUNTING'*s new-conſtructed* CALENDER MILL.

A A A A. The frame work.

B. The horſe track.

C. The horſe traces.

D. An upright ſhaft.

E. A wheel fixed on the upper end of the ſhaft.

F. A wheel working in the wheel E, and moveable on a ſtud or pin fixed in the frame work, A A.

G. A pin, with a roller on it, fixed in one of the arms or rim of the wheel F.

H. A connecting rod or piece, having a mortice or ſlit at right angles with the line of direction, which mortice receives the pin and roller G.

I. A roller to ſupport the end of the connecting rod H.

K K. Are chains with nuts and ſcrews at their ends to adjuſt them, one end of each fixed to the upper quadrant, the other ends to the connecting rod H.

L.

L. A double-headed quadrant moveable on the ſtrong pin M, which pin ſerves the quadrants as a fulcrum: the pin M is fixed faſt in a piece N, the upper end of which is made faſt to the frame work A A.

O O. Chains, with nuts and ſcrews at one end to adjuſt them: one end of each is fixed to the lower head of the quadrant L, the other ends fixed by their nuts and ſcrews to the piece P, which piece has a mortice in its centre to receive the ſtrong pin Q, and which pin ſerves the preſs as a fulcrum when it pitches, to take the goods out. The pin Q is faſtened to the loaded preſs R, as deſcribed by the dotted lines in the Plate.

S S. Rollers to put the goods on.

TWENTY GUINEAS were this Seſſion voted to Mr. JOSEPH RIDLEY, for his Subſtitute for a CRANK for communicating motion to a FOOT-LATHE, of which a Plate and Deſcription are hereunto annexed.

GENTLEMEN,

I BEG leave to lay before you, for your approbation, a Model of a Subſtitute for a Crank for communicating motion to a Foot-lathe, which I deſcribe as follows (and is ſhewn in the plate annexed). The principal object aimed at, is to diſlodge the Crank, with its imperfections.

I am, Gentlemen,

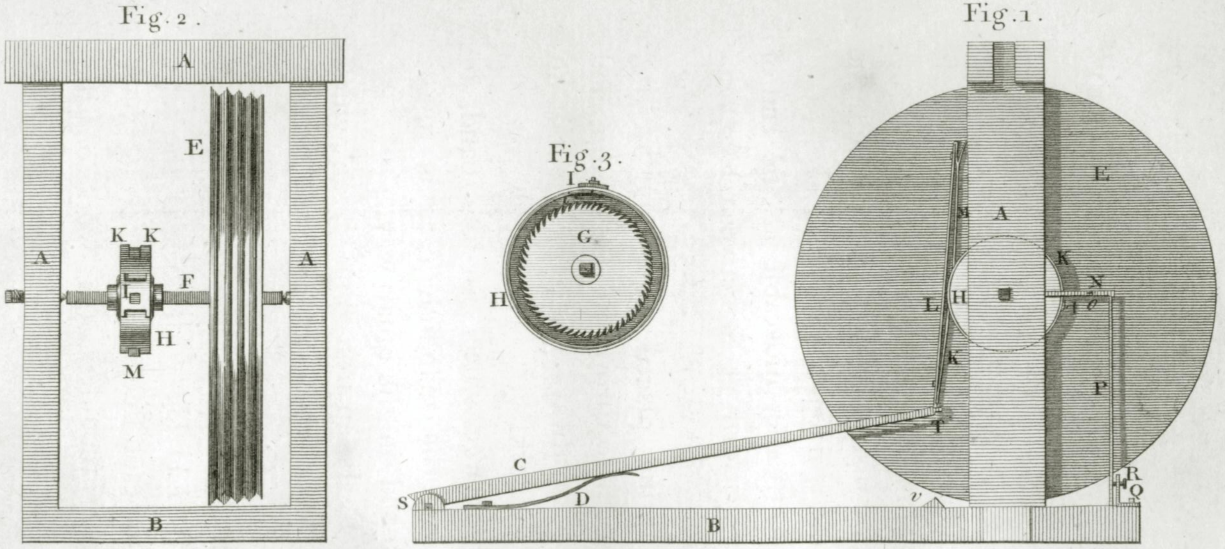
Your obliged humble ſervant,

JOSEPH RIDLEY.

To the Society for Encouragement of Arts, Manufactures, and Commerce.

The difference between the method now recommended, and the common Crank, as uſually employed for this purpoſe, is, firſt, that in order to obtain a proper motion of the Crank with full power, it muſt be placed in one point of its revolution, which requires time and dexterity; whereas the mode now before us, is at all times ready for the ſtroke, and the revolution immediately takes place on putting the foot on the treadle.

Secondly, In the common Cranks, the power acts only in a ſmall part of the revolution, and the full power is only exerted at one point; whereas, by the means now propoſed, the power is conſtantly exerted at that point where it can act to the greateſt effect; and this will prove particularly uſeful in the finer and more curious kind of work, where the Crank cannot be made to go ſlow enough.



M^r. Joseph Ridley's Substitute for a Crank.

Deſcription of the PLATE *of Mr.* RIDLEY'S *improved* FOOT-LATHE.

Fig. 1, 2. A A A A. The frame, which incloſes the wheels and the whole machinery.

B B. The floor or platform on which the frame is fixed.

C. The treadle, moveable at the end of the platform at S, between two centers.

D. A ſpring placed under the treadle, in order to throw the treadle up, and keep it always ready for the foot to ſet to work.

E E. The large wheel for the band, to which the mandrel, &c. is to be attached in the uſual way.

Fig. 2. F. Is an iron ſpindle, on which the great wheel, E, and the ratchet-wheel, G, Fig. 3, is fixed; the ratchet-wheel is incloſed in a braſs box, H H H, with holes in the center, on each ſide, and ſmall projections, forming ſhoulders, that work on the

cylinder parts at the centre of the rachet-wheel, G, through which the ſpindle F goes.

III. A piece of braſs, ſliding on the ſurface of the rim of the box, H, to govern the click, *i*, which is pinned in the inſide of the braſs box, and is worked by three ſtraps going round the box H: the double ſtrap, K K K K, is faſtened to the ſlider I, and brought over the rim of the box H, and faſtened to the lower part of the the ſteel bar, L, which is jointed to end of the treadle at T; by putting the foot on the treadle, and preſſing it down, the click *i* takes hold of the rachet-wheel, G, by which the power is obtained. To diſlodge the click, and bring the braſs box back for another ſtroke, there is a ſingle ſtrap, M M, fixed to the other end of the ſlider I, and brought under the rim of the braſs box, H, and made faſt to the top of the ſteel bar L. When the foot is up, the great wheel, E, is at liberty to go backward or forward, for the convenience of running back a ſcrew mandrel, or taking off a chuck: for diſengaging the click, two ſprings, N, lined with cork at the ends, are to be placed one on each ſide the braſs box, and preſſing gently againſt it.

O. A ſcrew which goes through the two ſprings, N, and regulates the degree of their preſſure on the braſs box; theſe ſprings are fixed on a thin piece of ſteel, P, riſing from the bottom, to which is ſoldered a piece of braſs, Q, having a ſcrew paſſing through it at R, by which the upright ſteel bar is regulated.

V. A ſmall piece of cork fixed on the platform, to prevent the treadle making any noiſe in coming down.

FORTY GUINEAS being the Premium offered for a PORTABLE MACHINE, for loading and unloading Goods, was this Seſſion adjudged to Mr. GEORGE DAVIS, of Windſor, Berks; the Model of which is reſerved in the Repoſitory of the Society for the inſpection and uſe of the Public, and a Plate of the Machine annexed.

SIR,

THE Society for the Encouragement of Arts, Manufactures, and Commerce, having offered a Premium for a Portable Machine to load and unload goods, I have herewith ſent a model, calculated, I humbly preſume, to anſwer the ends propoſed by the Society.

I have conceived it neceſſary to ſend a framed ſtage, as a repreſentation of a cart, to which the model is fixed on the front. The pullies that are on the ſtage may, for the

the moſt part, be affixed on the machine itſelf, adapted to every direction, and that will ſuit all carriages, however built. The model is made on a ſcale of about four inches to a foot, and will raiſe more than five hundred weight; therefore I am certain, when made to its intended ſize, it will be capable of loading a ton weight by one man only; and will be ſo portable as not to exceed one hundred and twelve pounds in weight. I therefore humbly hope that it will meet the approbation of the Society, and be found of great utility to the mercantile world.

I am, SIR,

Your obedient humble ſervant,

GEORGE DAVIS.

Thames-ſtreet, Windſor, Berks,
January 2, 1797.

Mr. MORE.

Deſcription of the PLATE *of Mr.* DAVIS's MACHINE *for loading and unloading Goods.*

A, The winch, by which the bar

B, Having thereon two endleſs ſcrews or worms,

C C, Which, working in the toothed wheels

D D, Fixed to the barrels

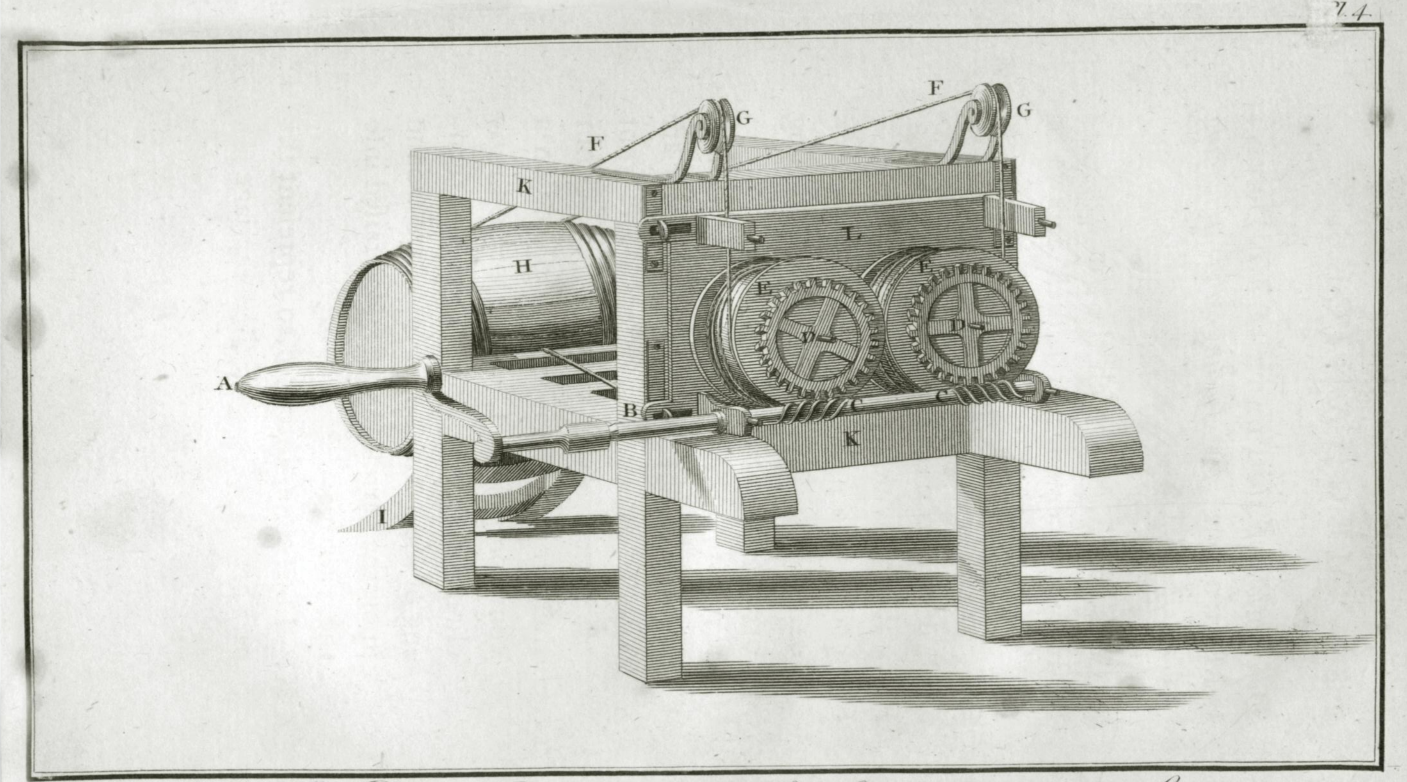
E E, Round which the ropes

F F coil, wind up, or let the ſame out occaſionally; and which ropes, paſſing over the two pullies,

G G, Are brought round; and their ends, having hooks for that purpoſe, are hitched into ſtaples, fixed to the front of the cart or other carriage; within theſe ropes the load H is placed on a common pulley, I, which forms an inclined plane; up which, by the turning of the winch, the ropes are wound upon the barrels, and the load raiſed into the carriage.

K K. The frame, intended to repreſent the part of the cart or other carriage on which

Pl.4



Mr. Geo: Davis's Portable Machine for Loading & Unloading Goods.

which the machine is occaſionally to be placed.

The whole of the barrels and cogged wheels are contained in an iron box, L, the ſides of which are repreſented in the print, as taken off, that the conſtruction of the ſeveral parts may be ſhewn.

Thirty Guineas were this Seſſion voted to Mr. Robert Salmon, of Woburn, Bedfordſhire, for his improved Machine for cutting Chaff; of which a complete Model is reſerved in the Society's Repoſitory, and a Plate and Deſcription is hereunto annexed.

SIR,

I HAVE herewith ſent you the deſcription of my Chaff-cutter, together with an account of its properties, and the advantages which I conceive to be obtained thereby.

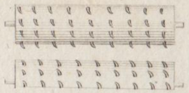
I am, Sir,

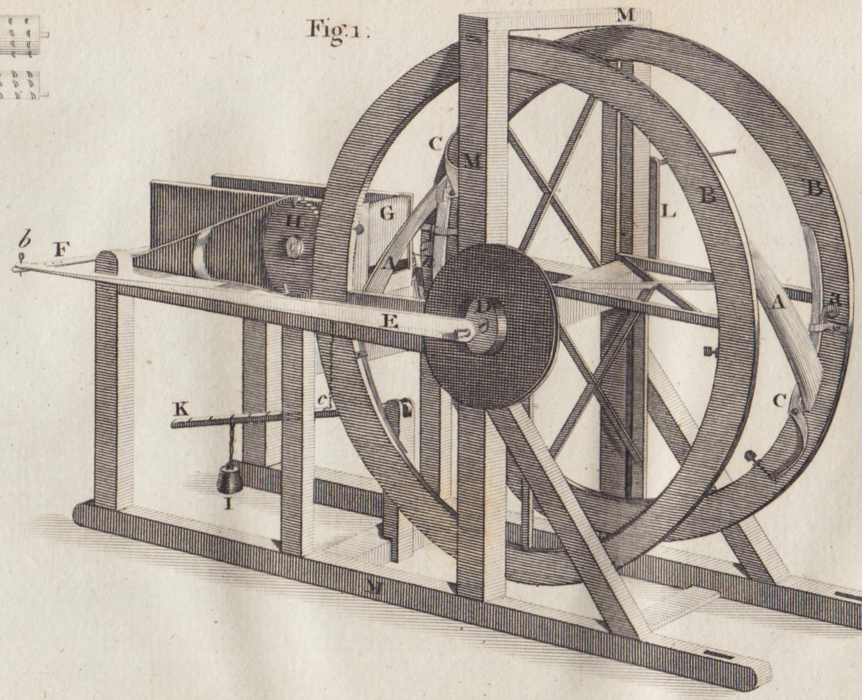
Your moſt obedient humble ſervant,

Robert Salmon.

Woburn Abbey,
April 19, 1797.

Mr. More.





Mr. Robt. Salmon's Improved Machine for Cutting Chaff.

Deſcription of the PLATE *of an improved Machine for* CUTTING CHAFF, *invented by Mr.* ROBERT SALMON, *of Woburn, Bedfordſhire.*

With this machine the Chaff is cut by two knives, A A, Fig. 1, fixed on the inſide of the fellies of two wheels, B B, which are ſtrongly connected together; the edge of the knives being at an angle of about forty-five degrees from the plane of the wheel's motion. Theſe knives are ſo fixed as to be forced forward by ſprings, C C, on the wheel, which ſprings are formed to adjuſt, and act more or leſs, as occaſion may require, ſo as to give the knife as much preſſure againſt the box as may be requiſite to cut the ſtraw. The knives are prevented from coming too forward, and occaſioning unneceſſary friction, by the wedges under the ſtaples *a a*; which wedges, as the knives wear, muſt be drawn out ſo as to admit the knives to come more forward. With the before mentioned proviſions it will be found very eaſy at any time to put on new knives, as the ſprings, &c. will always adjuſt them to their work.

On one ſide of the wheel is fixed a round block of wood, D, in which there are four holes and a moveable ſcrew; to this block is ſcrewed one end of the feeding-arm, E, running nearly horizontally to the croſs bar F, at the end of the box G; to which croſs bar, by the pin *b*, moveable to five different holes in F, by means of which, and the four holes in the block before deſcribed, twenty changes in the length of the chaff may be obtained. The ſtraw is brought forward by the rollers in the box G, the form of which is ſhewn at Fig. 2, which rollers are turned from the outſide by the riggers or ratchet-wheels, H, one on each ſide the box, which move more or leſs, according to the ſtroke given to the croſs bar by the feeding-arm and wheel; by this mode of feeding, the ſtraw is perfectly at reſt, and does not preſs forward at the time of the knife cutting; and, by means of the pin being taken out of the croſs bar, the feeding is inſtantly thrown off, although the

the wheel and knives may continue their motion. Under the box is ſuſpended the preſſing weight I, which may be made more or leſs powerful by ſhifting the weight on the bearer K, to which it hangs, and alſo may be thrown on either ſide, more or leſs, as occaſion may require; which will be found uſeful, in order to force the ſtraw towards the knife, and to counterbalance the ratchet-wheel of the upper roller: near the fulcrum of this bearer is fixed a chain, ſhewn by the dotted line *c*; its upper end ſuſpended from a roller, at each extremity of which is a ſmall bar of iron joined to the end of the upper ſpiked roller, by which means the ſtraw is always equally preſſed in paſſing the two-ſpiked rollers.

L. The winch by which the machine is turned.

M M M M. The frame of the machine.

In order to apply this machine to the beſt advantage, the inventor propoſes a ſecond box, to be placed at the end of the firſt, which

which box may be of any length, and ſuſpended by a line and counter-weight, whereby the end of it is brought down level whilſt filling with ſtraw, and then drawn up, ſo as to give the ſaid box a declivity, to make the ſtraw more eaſily come forward.

It is alſo preſumed much advantage may be expected in this ſort of machine, from its cutting various lengths—reſting during the cut—the knives being adjuſted to their work by regulating ſprings—the feeding being readily thrown off—and the preſſure moveable to either ſide.

It is alſo well calculated to be applied to any power which may be occaſionally fixed to the oppoſite ſide to that on which it is turned by hand; and, by the additional box, when uſed by hand, the workman will be enabled to cut for ſome continuance, without ſtopping to feed.

Woburn,
April 19, 1797.

DIRECTIONS TO THE BOOKBINDER.

Place the Print of William Benſon Earle, Eſq. as Frontiſpiece to the Volume.

Mr. Peck's Packing-preſs, to face page 267.

Mr. Bunting's Callender-mill, to face page 269.

Mr. Ridley's Foot-lathe, to face page 273.

Mr. Davis's Machine for Loading and Unloading Goods, to face page 278.

Mr. Salmon's Chaff-cutter, to face page 281.

ERRATA.

Page 267, line firſt, *for* PECK *read* PEEK.